

This guideline is intended for use following Carpal Tunnel surgery. It is designed to progress the individual through rehab to activity participation taking into consideration specific patient needs and issues.

This guideline is intended to provide the treating clinician a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post-operative care based on exam/treatment findings, individual progress, and/or the presence of concomitant procedures or post-operative complications. If the clinician should have questions regarding post-operative progression, they should contact the referring physician.

**General Guidelines/Precautions:**

- The goal of the surgery is to divide the transverse ligament or resect scar tissue to decompress the circulation and sensory deficits present within the median nerve distribution of the hand and wrist.
- Considerations:
  - TENS is not recommended for pain management as it may irritate the median nerve and increase pain.
  - Pillar pain may develop during the first 3 months following surgery. Pillar pain includes aching pain and tenderness along the thenar or hypothenar area which is aggravated by gripping and firm pressure along the palm. This should subside as post-op edema decreases.

Phase	Suggested Interventions	Goals/Milestones for Progression
<b>Phase I</b> Early Intervention	3-4 days post-op: remove surgical dressing and apply dry dressing, begin finger AROM and then instruct that in 7 to 10 days, they can initiate AROM and PROM of the wrist and digits including: <ul style="list-style-type: none"> <li>• Composite flexion and extension, isolated blocking of FPL, FDS and FDP, the active hook-fist exercise and intrinsic stretches, wrist ROM (flex /ext. /RD &amp; UD as tolerated), tendon gliding, active joint blocking</li> <li>• HEP 3-4x/day up to 4-6x per day for 5-10 min sessions, up to 25 repetitions for each exercise</li> <li>• Apply compressive garment/products as needed for edema control</li> <li>• Instruct pt to ice/elevate surgical extremity, keep hand clean and dry, use the hand for very light activity only</li> </ul>	Goals of Phase:  Criteria to Advance to Next Phase: <ol style="list-style-type: none"> <li>1. Suture/wound remains closed and absent of infection</li> <li>2. Improve motion</li> <li>3. Pain is decreased</li> <li>4. Swelling is reduced</li> <li>5. Paresthesia reduced</li> <li>6. Strengthening is not initiated at the next phase if significant pain or moderate amounts of edema exist.</li> <li>7. Decreased sleep disturbance with static wrist and hand angles.</li> </ol>

	<p>10 days post-op:</p> <ul style="list-style-type: none"> <li>• Dr. Volk: Initiate scar mobilization no sooner than 48 hours post suture removal or once the suture is completely healed. <ul style="list-style-type: none"> <li>○ Assess need for scar compression materials (silicone gel sheet, elastomer, etc.) Use of dry mobilization and followed by lotion/cream. 3-4 times per day for 3-5 minute sessions</li> </ul> </li> <li>• Initiate AROM and PROM: composite flexion and extension of the wrist, thumb and digits, isolated blocking of FPL, FDS and FDP, wrist ROM (flex /ext. /RD &amp; UD), tendon gliding, active hook fist exercise, intrinsic stretching and active joint blocking</li> <li>• HEP 3-4x/day up to 4-6x per day for 5-10 min sessions, up to 25 reps of each exercise <ul style="list-style-type: none"> <li>○ Begin manual desensitization beginning with light, soft fabrics, progressing to deeper pressure with coarse textures</li> <li>○ Post-op edema management</li> <li>○ Sleep positioning for post-surgical wrist/hand</li> <li>○ Gentle median nerve gliding exercises may be initiated</li> </ul> </li> </ul>	<p>*It is common to provide a written home program at this phase and not be scheduled for follow-up therapy beyond this time if the patient is not having any concerns with pain, edema or scar management areas. You may be able to provide the instruction and timeline to progress for the 3-6 post-op phases, hand-based ergonomics, long term stretching and if needed, strengthening.</p>
<p><b>Phase II</b></p>	<p>3 weeks post-op:</p> <ul style="list-style-type: none"> <li>• Begin gentle strengthening with Nerf/foam-type ball or soft Therapy putty, if pain and edema is controlled and weakness or strength is a concern.</li> <li>• HEP 3 2-4x per day for 5 min sessions</li> <li>• Dr. Dean: Initiate scar mobilization at 3 weeks to allow healing of incision.</li> <li>• If scar tissue remains to be painful or a motion limitation, consider ultrasound as a modality.</li> </ul>	<p>Goals of Phase: Functional goals:</p> <ol style="list-style-type: none"> <li>1. Begin light ADLs within lift/carry/grasp restrictions</li> <li>2. Knows conservative measures to address pain or edema with re-entry into activity (contrast bath, ice, heat, self- soft tissue mobilizations)</li> </ol>

	<ul style="list-style-type: none"> <li>• Provide soft tissue mobilization, desensitization and consider Fluidotherapy modality</li> </ul>	
<b>Phase III</b>	<p>4-6 weeks post-op:</p> <ul style="list-style-type: none"> <li>• Progressive strengthening for the intrinsic and extrinsic muscles: (*address if strength or weakness concerns are reported by the patient)</li> <li>• for wrist, thumb and digits 2-5 with hand exerciser – (the hand exerciser may need to be padded to avoid palmar discomfort)</li> <li>• 1-3 lb weights to the wrist and forearm</li> <li>• Avoid compression into the palm to allow optimal healing of the soft tissue structures</li> <li>• If scar tissue remains to be painful or a motion limitation exists, consider ultrasound as a modality.</li> <li>• Provide soft tissue mobilization, desensitization and consider if a modality would therapeutically benefit: Fluidotherapy, ultrasound or paraffin</li> </ul>	<p>Goals of Phase:</p> <p>Functional goals:</p> <ol style="list-style-type: none"> <li>1. Return to light to moderate ADL demands WFL with improved motion, strength and pain levels</li> <li>2. Integration of body mechanics and joint protection</li> </ol>
<b>Phase IV</b>	<p>6 weeks post-op:</p> <p>Prepare for returning to work with instruction in:</p> <ul style="list-style-type: none"> <li>• Body mechanics and ergonomics, avoiding repetitive overuse or wrist, avoiding high frequency vibration tools, ergonomically designed tools or work station for computer work.</li> <li>• If scar tissue remains to be painful or a motion limitation, consider ultrasound or paraffin as a modality.</li> <li>• Provide soft tissue mobilization, desensitization and consider Fluidotherapy modality</li> </ul>	<p>Goals of Phase:</p> <p>Functional goals:</p> <ol style="list-style-type: none"> <li>1. Return to full activity with work pacing and positioning principles</li> <li>2. Patient will be provided with education to perform hand-related body mechanics (anti-vibration gloves/materials, ergonomically designed hand-tools, work stations).</li> </ol>

<p><b>Phase V</b> Return to activity</p>	<p>If scar tissue remains to be painful or a motion limitation, consider ultrasound or paraffin as a modality.</p> <p>Provide soft tissue mobilization, desensitization and consider Fluidotherapy as a modality.</p>	<p>Goals of Phase:</p> <ol style="list-style-type: none"> <li>1. Full return to work status: continue flexibility stretching and exercises at least a couple times a day, especially if working in an office type setting</li> </ol>
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